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Sustainable learning a new paradigm in environmental education: a study to facilitate awareness among the school children in some selected schools in Nadia district, West Bengal, India

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ABSTRACT
Environmental education has been introduced as a comprehensive lifelong education responsive to changes in a rapidly changing world. But the ongoing environmental education including sustainable learning which has focused its importance of remedying environmental ignorance through awareness development has failed to achieve the desired objectives. Understanding environmental paradigm and adoption of pro-environmental attitude will be a critical endeavour in this century as environmental degradation has threatened the quality of life for all global citizens. Positive changes in humanity's treatment of the environment may not be possible until environmentally supportive paradigms replace other underlying paradigms. Though many studies have tried to focus on the significance of environmental paradigm but the paradigm shifts from instrumental learning to lifelong learning in environmental education remained unexamined. The present study tries to explore the paradigm shifts in environmental education a phenomena whereby an individual socialized with non-environmental paradigm undergoes some experience that brings transformation in his pro-environmental behavior. The study conducted among 11th grade school going children in some selected schools in Nadia district, West Bengal, India through survey reveal that a positive change has been noticed in their pro-environmental behavior related to connectedness to nature when exposed to a video film on the environmental degradation due to human activities. This is rather good indication for future strategy related to environmental education which will be the beginning of sustainable learning for developing environmentally sensitive citizenry capable to take decision against environmental degradation.

Key words: Sustainable learning, new paradigm, lifelong learning, environmental education, instrumental learning

Introduction

Lifelong learning was adopted by UNESCO (2008) as a blueprint for universal education and implies learning to be sustainable. The underlying percept of learning is too important for individuals as it relies on self-directed initiatives by recognizing the relationship between learning process and real life. The most effective way is to facilitate the process of learning by equipping the students with generic ability so that they are highly motivated to engage themselves in learning process.

The 8th World Environmental Education Congress (WEEC, 2015) emphasized the need to re-orient teaching and learning process to deal effectively the sustainability challenges of the environmental

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issues that are affecting the human society. This demands an increasing role of learning niches and capacity building for different social and economic actors. The recent curriculum development for environmental education entails learning to actively engage students to re-think the values and relation of the human being with the natural environment. This has been vital for the construction of a new paradigm as it stimulates and strengthens ethical and social-environmental responsibility.

To promote changes in behavior and attitudes in a collective perspective education in a new form of learning and engagement could be improved by implying a challenge for deeper thinking as a part of transition towards a sustainable world. This perspective emphasizes a different way of teaching and learning process to promote principles and values for development of skills, critical and creative thinking, active participation and problem solving strategies. The real purpose of environmental education is transformative which offers a wide spectrum of possibilities of learning activities for a healthier and balanced way of living. This means discovering, reconnecting and reflecting, a process of continuous learning (WEEC, 2015).

Educational practice is continually subjected to renewal due to rapid development of information and communication, commercialization and globalization of education, social changes and the pursuit of quality. Changes in educational practices lead in turn to changes in approaches to teaching and learning which has a far reaching impact on teaching and learning paradigm.

The present study tries to focus a new paradigm in environmental education to foster awareness development through facilitation activities among school going children related to adverse environmental effect due to human activities.

Review of Literature

Environmental education-a comprehensive lifelong education- is responsive to changes in a rapidly changing world. It should prepare the individual for life through an understanding of the major problems of the contemporary world, and the provision of skills and attributes needed to play a productive role towards improving life and protecting the environment with due regard given to ethical values (UNESCO, 1997). Several approaches for teaching and learning have been developed during the past decades. Most of them have in common to foster sustainability skills trying to encompass part of the huge diversity and complexity that sustainability presents (Cebrian and Junyent, 2015).

But the institutionalization process of environmental education has lost its idea of creating people with knowledge and skill to take challenges for protecting the environment in a multicultural world (Gruenewald, 2004). Emancipator environmental education program which seeks to engage participants in an active dialogue to establish their own objectives and plan for action has failed to achieve the desire objectives (D'Amato and Krasny, 2011).

The idea of a role for environmental education in fostering healthy development of children and youth has been the subject of widespread discussion. Hungerford and Volk (1990) include in their model of environmentally responsible behaviors predictors associated with personal growth, including feelings of environmental sensitivity, empowerment and ownership of nature.

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Wals et. al. (2008) presents several examples of environmental education programs that integrate emancipator and instrumental learning. Starling (2010) draws on the social learning and social-ecological resilience literatures to propose a theoretical framework for integrating intrinsic and instrumental learning to foster individual and social-ecological system resilience and sustainability.
The most widely used test of environmental paradigm is the new ecological paradigm (NEP) scales which is a cognitively based scale (Thogersen, 2004) that attempts to tap primitive beliefs about the nature of the earth and humanity's relationship with it. A recently designed scale – connectedness to nature scale (CNS) - is designed to tap an individual's affective, experiential connection to nature (Mayer and Frantz, 2004). These two scales, like others, use beliefs, values and feelings to obtain insight into paradigm.

Objectives of the Study

The objectives of the present study are:

- To evaluate the pro-environmental behavior related to connectedness to nature of the school going children
- To evaluate the changed behavior of the school going children after exposure to a video film on the adverse environmental effect due to human activities
- To focus on the lifelong learning as a new paradigm of environmental education

Methodology

The survey was administered to 201 school going children of 11th grade of general education program including environmental studies covering both gender and locality in Nadia district. The survey contained 20 items related to environmental behavior and experience on the adverse environmental effect on waste disposal system. The behavior and experience items are all five point Likert scale. Questions regarding the environmental experience are close ended and asked the respondents to describe their experiences which significantly adheres their connectedness to environment. They were again exposed to a video film to obtain the changes in behavior about the environment.

Results

Connecting experience described by the respondents for rural and urban students vary as recorded from the study. The mean was 83.4(SD= 7.3) for total boys before watching the video, it changed to 91.0 (SD=5.2) after watching the video. For girl students the corresponding mean was 85.0 (SD= 8.2) and 90.6 (SD= 6.5).

Mean value is 81.6 and SD is 6.8 for rural boys before watching the video, it is 84.63 and SD 7.5 for urban boys. The mean value changed to 89.35 (SD= 4.5) for rural boys after watching the video while the urban boys recorded a mean of 92.43 (SD= 5.4). The computed values for girl students on the other hand differ from boys (Mean= 82.00, SD= 9.0 and Mean= 89.4, SD= 7.6) in rural and (Mean= 87.00, SD= 7.0 and Mean= 91.6, SD= 5.6) urban areas. The *t* value ($t = 1.73, t < 0.01$) was for boys and it was ($t = 5.03, t > 0.01$) for girls.

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Discussion

The study conducted among the school going children having formal environmental education included in the general education curriculum. It has hardly any positive impact on environmental experiences that are needed for active participation and connectedness with the nature. Urban students play a significant role in the paradigm change as it encourages them to assess the unexplained philosophies they have internalized previously through formal education and evoked transformative thought pattern.

The study holds potential for change in behavior of the students who will be able to take appropriate decision related to environment. However the critical analyses of this environmental paradigm shifts may yield to suggest a change in educational paradigm that will be essential for lifelong education systems.The significance of pro-environmental behavior between boys and girls were representative of location and there is a clear distinction between individual groups having connecting experience with the environment. Environmental experience may play a dominant role in facilitating change in social paradigm to promote environmental paradigm. Students having environmental experience beyond formal class room learning scored higher values irrespective of gender and location which is reflected in *t* test. The obtained value suggests that for girl students it is significant at *0.01* level while it is not significant at *0.01* level for boys.

The relation between connecting environmental experience (exposure to video film) and pro-environmental behavior explains some strength and weakness of the obtained value. Varying values and beliefs of the individual acquired through formal educational system on environment led to higher scoring of data. Paradigm shifts on environmental education occur slowly. This is in transition and may not be justifiable to search the underlying percepts.

The results suggest that value-belief-norms aspects of the individual are inadequate to arrive at clear explanation. However experiential shifts in awareness are likely to play a major role in individual future decision making process which is related to sustainable learning. Awareness development through environmental education is a lifelong process and will be more effective with continuous environmental experience acquired through value-belief-norms aspects of the natural environment.

Conclusions

Environmental education influences an individual's response to pro-environmental behavior. Existing curriculum of environmental education at school level has deterred to develop proper awareness development. There is urgent need for development of environmental paradigm to foster lifelong learning which will be sustainable. The study clearly demonstrates the possible link between pro-environmental behavior and environmental experience. It explores the possibility that environmental paradigm shift may improve the environmental sustainability of the human kind.

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